REMARKS/ARGUMENTS

Reconsideration of the above-identified application in view of the present amendment is respectfully requested. By the present amendment, claims 1, 12, and 19 have been amended. Specifically, claims 1, 12, and 19 have been amended to recite that the foamed padding material substantially covers the spoke portion and the rim portion of the steering wheel. Support for this limitation can be found at page 6, paragraph 2 of the specification. Claims 1 and 12 have also been amended to recite that the foamed padding material is a foamed thermoplastic polyolefin elastomer padding material and to change the terms first portion and second portion to, respectively, inner portion and outer portion.

Below is a discussion of the 35 U.S.C. §102(b) and the 35 U.S.C. § 103 rejections presented herein in the order that they are presented in the Office Action.

35 U.S.C. §102(b) rejection of claims 1, 3-6, 8, 11, 19-24, and 27

Claims 1, 3-6, 8, 11, 19-24, and 27 were rejected under 35 U.S.C. §102(b) as being anticipated by Sawada et al. (Re. 36,898).

Claim 1 recites a steering wheel comprising a rim portion, a spoke portion, and a foamed thermoplastic polyolefin elastomer padding material adhered to the rim portion and the spoke portion. The foamed thermoplastic polyolefin elastomer padding material including an inner portion and an outer portion substantially covering the rim portion and the spoke portion. The inner portion has cellular structure and a substantially uniform cell density. The outer portion has a continuous external surface free of interruption by a cell. The foamed thermoplastic polyolefin elastomer padding material comprising a gasified chemical foaming agent and a thermoplastic polyolefin elastomer. The thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90.

Claim 1 is patentable over Sawada et al. because Sawada et al. do not teach a foamed thermoplastic polyolefin padding material comprising an inner portion and an outer portion that substantially cover a rim portion and spoke portion of a steering wheel.

Sawada et al. teach a cover for a vehicle air bag that comprises an injection molded core layer and an injection molded external surface layer. Sawada et al. do not teach that the air bag cover substantially covers a rim portion and spoke portion of a steering wheel. Accordingly, Sawada et al. fail to teach all of the limitations of claim 1, and withdrawal of the 35 U.S.C. §102(b) rejection of claim 1 is respectfully requested.

Claims 3-6, 8, and 11 depend either directly or indirectly from claim 1 and therefore should be allowed because of the aforementioned deficiencies in the rejection with respect to claim 1 and the limitations recited in claims 3-6, 8, and 11.

Claim 19 recites a method of manufacturing a foamed padding material for a steering wheel. In the method, a thermoplastic polyolefin elastomer and a chemical foaming agent are mixed. The thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90. The thermoplastic polyolefin elastomer is foamed with said chemical foaming agent. A steering wheel armature having a rim portion and a spoke portion is provided. The rim portion and the spoke portion of the steering wheel armature are substantially covered with the foamed thermoplastic polyolefin elastomer. The foamed thermoplastic polyolefin elastomer is adhered to the rim portion and spoke portion of said steering wheel armature and forms a foamed padding material that includes a first portion and a second portion. The first portion has cellular structure and a substantially uniform cell density. The second portion has an external surface free of interruption by a cell.

Claim 19 is patentable over Sawada et al. because Sawada et al. do not teach a substantially covering a rim portion and a spoke portion of a steering wheel with a foamed thermoplastic polyolefin padding material.

As discussed above, Sawada et al. teach a cover for a vehicle air bag that comprises an injection molded core layer and an injection molded external surface layer. Sawada et al. do not teach that the air bag cover substantially covers a rim portion and spoke portion of a steering wheel. Accordingly, Sawada et al. fail to teach all of the limitations of claim 19, and withdrawal of the 35 U.S.C. §102(b) rejection of claim 19 is respectfully requested.

Claims 20-24 and 27 depend either directly or indirectly from claim 19 and therefore should be allowed because of the aforementioned deficiencies in the rejection with respect to claim 19 and the limitations recited in claims 20-24 and 27.

35 U.S.C.§103(a) rejection of claims 7, 12, 14, 15, 18, and 28

Claims 7, 12, 14, 15, 18, and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sawada et al. in view of Reidy et al. (6,386,579). The Office Action argues that Sawada et al. discloses a foamed padding material as claimed, but does not disclose whether the material is plasticizer free. However, Reidy et al. discloses a foramed padding material for a steering wheel that is plasticizer-free. The Office action further argues that it would be obvious to one skilled in the art to modify the padding of Sawada et al. with the teachings of Reidy et al. to omit plasticizers as they can migrate to the surface of the padding and cause adhesion with paints.

Claims 7, 12, 14, 15, 18, and 28 are not obvious in view of Sawada et al. and Reidy et al. because Sawada et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that substantially covers a rim and spoke portion of

a steering wheel that is plasticizer-free, and that comprises a thermoplastic polyolefin elastomer, which is weatherable and has a durometer shore A hardness of about 30 to about 90.

As discussed above, Sawada et al. teach an air bag cover that comprise a first thermoplastic material and a second thermoplastic material. Sawada et al. neither teach or suggest that the first thermoplastic material and the second thermoplastic material substantially cover a rim portion and spoke portion of a steering wheel. Moreover, as noted in the Office Action, Sawada et al. do not teach omitting a plasticizer.

Reidy et al. teach a padding material comprising a thermoplastic elastomer for a steering wheel. Reidy et al. also teach at column 9, lines 14-33 that in the past PVC was for steering wheels and that the plasticizer in PVC migrated. Reidy et al. further adds that EM 400 is now used because it has "no plasticizer migration". The fact that EM 400 has "no plasticizer migration" does not teach using a thermoplastic polyolefin elatomer that is "plasticizer-free". It only suggests formulating or selecting an elastomer in which the plasticizer does not migrate, not omitting the plasticizer from the microplastic elastomer.

Thus, Sawada et al. do not teach substantially covering a rim portion and spoke portion of a steering wheel with a foamed thermoplastic polyolefin elastomer padding material and Reidy et al. provides no suggestion to modify the teaching of Sawada et al. to omit a plasticizer. Therefore, withdrawal of the rejection of claim 7 is respectfully requested.

Claims 12 contains similar limitations as claim 7 and therefore should be allowed for the aforementioned deficiency in the rejection with respect to claim 7 and the specific limitations recited in claims 12.

Claims 14, 15, and 18 depend either directly or indirectly from claim 12 and therefore should be allowed because of the aforementioned deficiencies in the rejection with respect to claim 12 and the limitations recited in claims 14, 15, and 18.

Claims 28 contains similar limitations as claim 7 and therefore should be allowed for the aforementioned deficiency in the rejection with respect to claim 7 and the specific limitations recited in claims 28.

35 U.S.C.§103(a) rejection of claims 9 and 25

Claims 9 and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sawada et al. in view of Braun et al. (WO 99/10419). The Office Action argues that Sawada et al. disclose the claimed invention except for the encapsulation of the foaming agent and Braun et al. disclose that it is known in the art to provide an impregnated polyolefin granule containing a foaming agent.

Claim 9 depends from claim 1 and further recites that the chemical foaming agent prior to being gasified is in the form of a plurality of granules that are encapsulated with a resin carrier.

As discussed above with respect to claim 1, Sawada et al. do not teach or suggest do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that substantially covers a rim and spoke portion of a steering wheel. Moreover, Braun et al. do not disclose or suggest a foamed thermoplastic polyolefin elastomer padding material that substantially covers a rim and spoke portion of a steering wheel. Therefore, claim 9 is patentable over Sawada et al. in view of Braun et al.

Claim 25 depends indirectly from claim 19 and further recites that the chemical foaming agent is in the form of a plurality of granules that are encapsulated with a resin carrier.

As discussed above with respect to claim 19, Sawada et al. do not teach or suggest do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that substantially covers a rim and spoke portion of a steering wheel. Moreover, Braun et al. do not disclose or suggest a foamed thermoplastic polyolefin elastomer padding material that substantially covers a rim and spoke portion of a steering wheel. Therefore, claim 25 is patentable over Sawada et al. in view of Braun et al.

35 U.S.C.§103(a) rejection of claims 10, 16, 17, and 25

Claims 10, 16, 17, and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sawada et al. in view of Reidy et al. (6,386,579), and further in view of Braun et al. The office action argues that the reference combination set forth above discloses the claimed invention having a resin carrier made of a thermoplastic polyolefin elastomer but does not disclose the encapsulation of the foaming agent. However, Braun et al. disclose that it is known in the art to provide an impregnated polyolefin granule containing a foaming agent.

Claims 10, 16, and 17 are patentable over Sawada et al. in view of Reidy et al. and Braun et al. because Sawada et al. in view of Reidy et al. and Braun et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that substantially covers a rim and spoke portion of a steering wheel and and that comprises a thermoplastic polyolefin elastomer, which is weatherable and has a durometer shore A hardness of about 30 to about 90.

As discussed above, Sawada et al. disclose a foamed padding material, but does not disclose that the foamed padding material substantially covers a rim portion and spoke portion of a steering wheel. Reidy et al. discloses a formed padding material for a

steering wheel but does not disclose that thermoplastic polyolefin elastomer, which is weatherable and has a durometer shore A hardness of about 30 to about 90.

There is no suggestion in Sawada et al., Reidy et al. or Braun et al. to provide a foamed thermoplastic polyolefin elastomer padding material that substantially covers a rim and spoke portion of a steering wheel and and that comprises a thermoplastic polyolefin elastomer, which is weatherable and has a durometer shore A hardness of about 30 to about 90. Moreover, the Office Action fails to provide a motivation of why one skilled in the art would substitute one thermoplastic material for another either of references. Particularly, both Sawada et al. teach padding materials that have specific properties for their intended purpose. There is nothing to suggest that these padding mateirals are interchangeable or that the inventions if such a substitution was made to achieve the invention recited in the claims is operable. Thus, Sawada et al. in view of Reidy et al. and Braun et al. fail to teach all of the limitations of claims 10, 16, and 17 and allowance of these claims is respectfully requested.

Claim 25 contains similar limitations as claims 10, 16, and 17 and therefore should be allowed for the aforementioned deficiency in the rejection with respect to claim 10, 16, and 17 and the specific limitations recited in claims 25.

35 U.S.C.§103(a) rejection of claims 29-35

Claims 29-35 were rejected under 35 U.S.C. §103 as being unpatentable over Sawada et al. in view of Clarke. The Office Action argues that Sawada et al. disclose the claimed invention except for varying the temperature of the mold over different portions. Clarke teaches molding an article by using temperature variations to control the degree of foaming.

Claim 29 recites a method of manufacturing a steering wheel. In the method, a thermoplastic polyolefin elastomer and a foaming agent are mixed. The mixture of the thermoplastic polyolefin elastomer and the foaming agent are heated to a temperature above the melting temperature of the thermoplastic polyolefin elastomer. The melted thermoplastic polyolefin elastomer is foamed with the foaming agent. A mold is provided having a first wall portion and a second wall portion. The first wall portion defines a first cavity in which a rim portion of a steering wheel armature is disposed. The second wall portion defines a second cavity in which a spoke portion and the steering wheel armature are disposed. The temperature of the first wall portion is maintained at a first temperature below the melting temperature of thermoplastic polyolefin elastomer. The temperature of the second wall portion is maintained at a second temperature. The second temperature is substantially lower than the first temperature. The foamed thermoplastic polyolefin elastomer is transferred into the first cavity and the second

cavity. The foamed thermoplastic polyolefin elastomer is cooled to a temperature below the melting temperature of the thermoplastic polyolefin elastomer adhering to the rim portion and spoke portion of the steering wheel armature.

Claim 29 is patentable over Sawada et al. in view of Clarke because Sawada et al. in view of Clarke do not teach or suggest (1) a mold that includes a cavity in which a rim of a steering wheel armature is disposed and a second cavity in which a spoke portion of a steering wheel armature is disposed and (2) maintaining a first wall portion, which defines a cavity in which the rim of a steering wheel is disposed at a first temperature and maintaining a second wall portion, which defines a cavity in which the spoke portion and steering wheel armature are disposed at second temperature, lower than the first temperature.

Sawada et al. do not teach or suggest a mold that includes a cavity in which a rim of a steering wheel armature is disposed and a second cavity in which a spoke portion of a steering wheel armature is disposed. Sawada et al. only refer to a mold for an air bag cover. There is no teaching or suggestion in Sawada et al. to provide a mold with a first cavity and a second cavity. Clarke likewise does not teach or suggest a mold that includes a cavity in which a rim of a steering wheel armature is disposed and a second cavity in which a spoke portion of a steering wheel armature is disposed.

Additionally, Sawada et al. in view of Clarke do not teach maintaining wall portions, which define first and second cavities, respectively, for the rim portion and the spoke portion and armature at different temperatures.

As noted in the Office Action, Clarke teaches a mold wall portion can be cooled at different sections to control the degree of foaming. Clarke, however, do not teach maintaining a first wall portion, which defines a cavity in which the rim of a steering wheel is disposed at a first temperature and maintaining a second wall portion, which defines a cavity in which the spoke portion and steering wheel armature are disposed at second temperature, lower than the first temperature. In fact, Clarke mentions nothing on why it would be advantageous to maintain one part of a mold for forming a padding material for a steering wheel at one temperature while maintaining a second part of a mold for forming a padding material at a second temperature. Thus, there is nothing that suggests modifying Sawada et al. in this manner.

Additionally, Clarke provides no motivation modify Sawada et al. to maintain a first wall portion, which defines a cavity in which the rim of a steering wheel is disposed at a first temperature and maintaining a second wall portion, which defines a cavity in which the spoke portion and steering wheel armature are disposed at second temperature, lower than the first temperature. Clarke teaches forming a cup of plastic material not a padding material for a steering wheel.

Thus, Sawada et al. and Clarke do not disclose or suggest the invention recited in claim 29 and withdrawal of the rejection of claim 29 is respectfully requested.

Claims 30-35 depend either directly or indirectly from claim 29 and therefore should be allowable because of the aforementioned deficiencies of the rejection with respect to claim 29 and for the specific limitations recited in claims 30-35.

35 U.S.C.§103(a) rejection of claim 36

Claim 36 was rejected under 35 U.S.C. §103 as being unpatentable over Sawada et al. in view of Clarke and Braun et al.

As noted above with respect to claim 29, Sawada et al. in view of Clarke do not teach or suggest (1) a mold that includes a cavity in which a rim of a steering wheel armature is disposed and a second cavity in which a spoke portion of a steering wheel armature is disposed and (2) maintaining a first wall portion, which defines a cavity in which the rim of a steering wheel is disposed at a first temperature and maintaining a second wall portion, which defines a cavity in which the spoke portion and steering wheel armature are disposed at second temperature, lower than the first temperature.

Braun et al. further do not teach a mold that includes a cavity in which a rim of a steering wheel armature is disposed and a second cavity in which a spoke portion of a steering wheel armature is disposed and (2) maintaining a first wall portion, which defines a cavity in which the rim of a steering wheel is disposed at a first temperature and maintaining a second wall portion, which defines a cavity in which the spoke portion and steering wheel armature are disposed at second temperature, lower than the first temperature .

Therefore, Sawada et al. in view of Clarke and Braun et al. fail to teach all of the limitations of 36 and withdrawal of the rejection of claim 36 is respectfully requested.

35 U.S.C.§103(a) rejection of claim 37

Claim 36 was rejected under 35 U.S.C. §103 as being unpatentable over Sawada et al. in view of Clarke and Reidy et al.

As noted above with respect to claim 29, Sawada et al. in view of Clarke do not teach or suggest (1) a mold that includes a cavity in which a rim of a steering wheel armature is disposed and a second cavity in which a spoke portion of a steering wheel armature is disposed and (2) maintaining a first wall portion, which defines a cavity in which the rim of a steering wheel is disposed at a first temperature and maintaining a second wall portion, which defines a cavity in which the spoke portion and steering wheel armature are disposed at second temperature, lower than the first temperature.

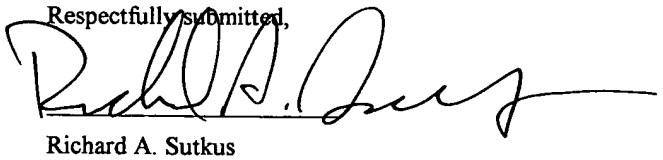
Reidy et al. further do not teach a mold that includes a cavity in which a rim of a steering wheel armature is disposed and a second cavity in which a spoke portion of a steering wheel armature is disposed and (2) maintaining a first wall portion, which defines a cavity in which the rim of a steering wheel is disposed at a first temperature and maintaining a second wall portion, which defines a cavity in which the spoke portion and steering wheel armature are disposed at second temperature, lower than the first temperature.

Therefore, Sawada et al. in view of Clarke and Reidy et al. fail to teach all of the limitations of 37 and withdrawal of the rejection of claim 37 is respectfully requested.

In view of the foregoing, it is respectfully submitted that the above-identified application is in condition for allowance, and allowance of the above-identified application is respectfully requested.

Please charge any deficiency or credit any overpayment in the fees for this amendment to Deposit Account No. 20-0090.

Respectfully submitted,



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